

**In the claims:**

1. **(Currently Amended)** A method of resisting corrosion of metals in a concrete structure comprising,
- creating an overlay containing at least one compound capable of sequestering chloride ions, said compound selected from the group consisting of  $3\text{Me(II)}\text{O}\cdot\text{R}_2\text{O}_3\cdot\text{Me(II)}(\text{anion})_2\cdot n\text{H}_2\text{O}$  where  $n = 0$  to 24 and  $3\text{Me(II)}\text{O}\cdot\text{R}_2\text{O}_3\cdot\text{Me(II)}(\text{anion})\cdot n\text{H}_2\text{O}$  where  $n = 0$  to 18,
- wherein Me(II) is one or more cations selected from the group consisting of Ca, Ba, Sr, Mn and Zn,  $\text{R}_2$  is  $\text{Al}_2$ ,  $\text{Fe}_2$  or  $\text{Cr}_2$ , anion is  $\text{NO}_2$ ,  $\text{NO}_3$ ,  $\text{CO}_3$ ,  $\text{BO}_4$ , or  $\text{OH}$ , but when  $\text{R}_2$  is  $\text{Al}_2$  then Me(II) is not Ca;
- securing said overlay adjacent to said concrete structure, and sequestering chloride ions in said overlay.
2. **(Original)** The method of Claim 1 including securing said overlay to said concrete structure to permit chloride ion exchange therebetween.
3. **(Original)** The method of Claim 2 including creating said overlay on said concrete structure.
4. **(Original)** The method of Claim 2 including preforming said overlay, and securing said preformed overlay to said concrete structure.
5. **(Original)** The method of Claim 4 including securing said preformed overlay to said concrete structure by adhesive.
6. **(Original)** The method of Claim 1 including effecting said securing to establish surface-to-surface contact between said overlay and said concrete structure.
7. **(Original)** The method of Claim 1 including applying said overlay to said concrete structure as a slurry.
8. **(Original)** The method of Claim 7 including applying a second layer of said overlay over said slurry.
9. **(Original)** The method of Claim 8 including

providing said second layer with lower porosity than said slurry layer.

10. **(Original)** The method of Claim 1 including employing a material selected from the group consisting of concrete, asphalt, Portland cement, clay, calcium aluminate cement, and mortar in said overlay.
11. **(Original)** The method of Claim 1 including introducing high ionic strength liquid into said overlay.
12. **(Original)** The method of Claim 1 including employing said method on a concrete structure disposed at least partially under water.
13. **(Original)** The method of Claim 1 including performing said process without requiring ongoing input of electrical energy.
14. **(Original)** The method of Claim 1 including establishing said overlay with a thickness of about 0.5 to 10 inches.
15. **(Currently Amended)** The method of Claim 1 including wherein  
employing as said compound a compound capable of establishing ~~establishes~~ a corrosion resistant oxide layer on embedded metal elements.
16. **(Currently Amended)** The method of Claim 1 including wherein  
effecting said chloride sequestration in a low-solubility ~~compound~~ results in a chloride-containing compound having low solubility in said concrete.
17. **(Original)** The method of Claim 1 including employing a nitrite-containing compound as said compound.
18. **(Original)** The method of Claim 1 including employing said method on metal elements made of steel.
19. **(Original)** The method of Claim 2 including

employing as said compound, a compound capable of liberating nitrite ions.

20. **(Currently Amended)** The method of Claim 1 including employing as said compound a compound selected from the group consisting of

$3\text{CaO}\cdot\text{Al}_2\text{O}_3\cdot\text{Ca}(\text{NO}_2)_2\cdot n\text{H}_2\text{O}$ ;  $3\text{CaO}\cdot\text{Al}_2\text{O}_3\cdot\text{Ca}(\text{NO}_3)_2\cdot n\text{H}_2\text{O}$ ;  
 $3\text{CaO}\cdot\text{Fe}_2\text{O}_3\cdot\text{Ca}(\text{NO}_2)_2\cdot n\text{H}_2\text{O}$ ; and  $3\text{CaO}\cdot\text{Fe}_2\text{O}_3\cdot\text{Ca}(\text{NO}_3)_2\cdot n\text{H}_2\text{O}$

wherein  $n = 0$  to  $24$ .

21. **(Cancelled)**

22. **(Original)** The method of Claim 14 including establishing said overlay with a thickness of about 1 to 4 inches.

23. **(Cancelled)**

24. **(Currently Amended)** The method of Claim 1 including said metals elements being embedded reinforcing elements.

25. **(Currently Amended)** The method of Claim 1 including effecting introducing said compound introduction into ingredients of said concrete prior to creating said overlay.

26. **(Original)** The method of Claim 1 including effecting said overlay creation by mixing said compound in dry form with cement in dry form and subsequently adding water to said compound and cement mixture.

27. **(Original)** The method of Claim 26 including adding other ingredients to said mixture prior to adding said water.

28. **(Cancelled)**

29. **(Currently Amended)** A concrete assembly comprising a concrete structure,  
 a plurality of metal elements within said concrete structure,  
 an overlay containing a compound capable of sequestering chloride ions disposed within said concrete structure, said compound selected from the group consisting of

3Me(II)O·R<sub>2</sub>O<sub>3</sub>·Me(II)(anion)<sub>2</sub>·nH<sub>2</sub>O where n = 0 to 24 and

3Me(II)O·R<sub>2</sub>O<sub>3</sub>·Me(II)(anion)·nH<sub>2</sub>O where n = 0 to 18,

wherein Me(II) is one or more cations selected from the group consisting of Ca, Ba, Sr, Mn and Zn, R<sub>2</sub> is Al<sub>2</sub>, Fe<sub>2</sub> or Cr<sub>2</sub>, anion is NO<sub>2</sub>, NO<sub>3</sub>, CO<sub>3</sub>, BO<sub>4</sub>, or OH, but when R<sub>2</sub> is Al<sub>2</sub> then Me(II) is not Ca; and

said concrete structure and said overlay being disposed in close adjacency to permit ion exchange between pores of said concrete structure and said overlay.

30. **(Original)** The concrete structure of Claim 29 including said concrete structure being a portion of a bridge.
31. **(Original)** The concrete structure of Claim 29 including said concrete structure being a portion of a pier.
32. **(Original)** The concrete structure of Claim 29 including said concrete structure being a portion of a highway.
33. **(Original)** The concrete structure of Claim 29 including said concrete structure being a portion of a parking garage or

parking lot.

34. **(Currently Amended)** The concrete structure of Claim 29 including wherein said compound being capable of establishing establishes a corrosion resistant oxide layer on said metal reinforcing elements.

35. **(Currently Amended)** The concrete structure of Claim 29 including wherein said chloride ion sequestering sequestration compound being a low-solubility compound results in a chloride-containing compound having low solubility in said concrete.

36. The concrete structure of Claim 29 including said chloride ion sequestering compound being a compound containing nitrite.

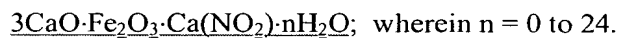
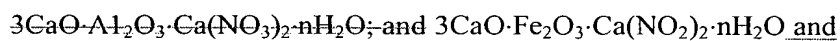
37. **(Currently Amended)** The concrete structure of Claim 29 including said compound being selected from the group consisting of 3CaO·Al<sub>2</sub>O<sub>3</sub>·Ca(NO<sub>2</sub>)<sub>2</sub>·nH<sub>2</sub>O; 3CaO·Al<sub>2</sub>O<sub>3</sub>·Ca(NO<sub>3</sub>)<sub>2</sub>·nH<sub>2</sub>O; 3CaO·Fe<sub>2</sub>O<sub>3</sub>·Ca(NO<sub>2</sub>)<sub>2</sub>·nH<sub>2</sub>O and 3CaO·Fe<sub>2</sub>O<sub>3</sub>·Ca(NO<sub>3</sub>)<sub>2</sub>·nH<sub>2</sub>O wherein n = 0 to 24.

**38 – 39 (Cancelled)**

**40. (Currently Amended)** A compound capable of sequestering chloride comprising a compound selected from a group consisting of

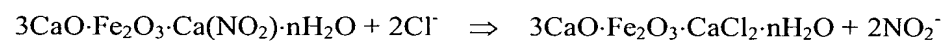


wherein  $n = 0$  to  $24$ ;

**41. (Cancelled)**

**42. (Original)** The method of Claim 1 including employing the following reaction in sequestering said chloride

ions



wherein  $n = 0$  to  $24$ .